I Claim:

1. An audio boost circuit comprising:

an input buffer responsive to a program input signal having high, low and mid-range frequency signal components for providing a buffered program signal,

an all pass phase inverter having an input coupled to receive the buffered program signal and an output providing an inverted buffered program signal,

a band pass filter having a predetermined Q, responsive to the buffered program signal for providing an inverted band pass boosted program signal,

a summing amplifier for adding the inverted buffered program signal to the inverted band pass boosted program signal and for providing a composite program signal signal.

2. The audio boost circuit of claim 1 wherein the band pass filter having a predetermined Q has a peak gain at a center frequency, and,

frequency adjustment means for adjusting the frequency at which the peak gain occurs.

3. The audio boost circuit of claim 2 wherein the band pass filter having a predetermined Q further comprises:

a first, second and third resistor, each having a first and second terminal,

a first and second capacitor, each capacitor having a first and second terminal, and

an operational amplifier having an inverting input, a non-inverting input and an output,

the first resistor first terminal being coupled to receive the buffered program signal, the first resistor second terminal being coupled to the second resistor first

terminal and to the first terminal of the first and second capacitors, the second resistor's second terminal being coupled to a reference potential, the first capacitor second terminal being connected to the operational amplifier's inverting input and to the third resistors first terminal, the second capacitor's second terminal being connected to the operational amplifier's output terminal and to the third resistor's second terminal.

4. The audio boost circuit of claim 3 wherein the band pass filter frequency adjustment means for adjusting the frequency at which the peak gain occurs comprises:

a frequency adjustment resistor interposed in series with the second resistor and the reference potential.

5. The audio boost circuit of claim 4 wherein the band pass filter's first, second and third resistor values and the values of the first and second capacitors are selected to obtain a Q in the range of from 3 to 6, and

the frequency adjustment resistor is adjusted to position the peak gain at a frequency in the range of 50 to 100 herts.

6. The audio boost circuit of claim 1 wherein the summing amplifier for adding the inverted buffered program signal to the inverted band pass boosted program signal and for providing a composite program signal further comprises:

a first input coupled to receive the inverted buffered program signal and a second input coupled to receive the inverted band pass boosted program signal, and adjustment means for adjusting the relative gain of the inverted buffered program signal with respect to the inverted band pass boosted program signal.

7. The audio boost circuit of claim 6 wherein the adjustment means for adjusting the relative gain of the inverted buffered program signal with respect to the inverted band pass boosted program signal further comprises a boost adjusting resistor in series with the second input to the summing amplifier.

8. The audio boost circuit of claim 1 wherein the input buffer for providing a buffered program signal further comprises:

an input buffer connected to receive the program input signal and for processing the input program signal to provide high, low and mid-range frequency signal components, the input buffer having gain control circuitry for balancing and summing the high and mid-range signals.

9. The audio boost circuit of claim 8 wherein the input buffer further comprises:

a state-variable filter responsive to the program input signal for producing high, low and mid-range frequency signal components; and

a state-variable summing amplifier for adding the high, low and mid-range frequency signal components to provide the buffered program signal.

10. The audio boost circuit of claim 9 wherein the mid-range signal components produced by the state-variable filter are inverted in phase with respect to the phase of the high and low frequency signal components produced by the state-variable filter .

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11. An audio boost circuit comprising:

an input buffer coupled to be responsive to a program

input signal having high, low and mid-range frequency signal components, the input buffer having a state-variable filter for processing the program input signal into high, low and mid-range frequency signal components, and a state-variable summing amplifier for balancing and summing the low, high and mid-range signal components and for providing the buffered program signal,

an all pass phase inverter having an input coupled to receive the buffered program signal and an output providing an inverted buffered program signal,

a band pass filter having a predetermined Q, responsive to the buffered program signal for providing an inverted band pass boosted program signal,

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a summing amplifier for adding the inverted buffered program signal to the inverted band pass boosted program signal and for providing a composite output signal.

12. The audio boost circuit of claim 11 wherein the input buffer's state-variable filter for providing a compensated signal further comprises:

a first amplifier stage responsive to the program signal for providing a high frequency compensated signal;

a second amplifier stage responsive to an output of the first amplifier stage for providing a mid-range compensated signal;

a third amplifier stage responsive to the mid range compensated signal for providing a low range compensated signal; and

a state-variable summing circuit for adding the high frequency compensated signal, the low frequency compensated signal and the mid-range compensated signal to provide the buffered program signal.

13. The audio boost circuit of claim 12 wherein the mid-range compensated signal is out of phase with the high range and low range compensated signals.

14. The audio boost circuit of claim 13 wherein the input buffer's state-variable filter for providing a buffered program signal further comprises:

an adjusting means for adjusting the gain between the high frequency compensated signal and the mid-range signal.

15. An audio boost circuit comprising:

an input buffer responsive to a program input signal having high, low and mid-range frequency signal components for providing a buffered program signal, the input buffer comprising:

a state-variable filter for processing the input program signal into high, low and mid-range frequency compensated signal components, the state-variable filter comprising:

a first amplifier stage responsive to the program signal for providing a high frequency compensated signal;

a second amplifier stage responsive to an output of the first amplifier stage for providing a mid-range compensated signal; and,

a third amplifier stage responsive to an output of the second amplifier stage for providing a low range compensated signal;

the input buffer further comprising:

a state-variable summing circuit for adding the high frequency compensated signal, the low frequency compensated signal and the mid-range compensated signal and an adjusting means for adjusting the gain between the high frequency compensated signal and the mid-range compensated signal; and

the low frequency compensated signal to provide the buffered program signal;

an all pass phase inverter having an input coupled to receive the buffered program signal and an output providing an inverted buffered program signal,

a band pass filter having a predetermined Q, responsive to the buffered program signal for providing an inverted band pass boosted program signal,

a summing amplifier for adding the inverted buffered program signal to the inverted band pass boosted program signal and for providing a composite program signal, and

a power amplifier and speaker means responsive to the composite program signal for producing an audible sound in response to the composite program signal.

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16. The audio boost circuit of claim 15 wherein the mid-range signal components are inverted in phase with respect to the high and low frequency signal components.

17. The audio boost circuit of claim 15 wherein the input buffer's state-variable filter further comprises:

a first amplifier stage having an inverting and non-inverting input; the program signal being coupled to the inverting input; and

a resistor divider network responsive to the mid-range compensated signal, the resistor divider network having an output for providing a portion of the mid-range compensated signal to the first amplifier non-inverting input.

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